nature as that by which the saliva and the watery portion of the urine are secreted from the circulating mass. He considers that his views are supported by the anatomical distribution of the lymphatic system: for on the principle that organs are found in the vicinity of the places where their office is wanted, the office of the lymphatics must be general, inasmuch as the system is general. These vessels may, in fact, be regarded as the essential element of an universally distributed gland. The mode in which the lymphatics are finally connected with the blood-vessels appears also to indicate that the object in view is to keep their watery fluid separate from the blood as long as possible; for, as is well known, they do not transfer their contents into the neighbouring veins, but pour their whole fluid into the superior vena cava at the moment it is about to enter into the heart.

The remarkable manner in which the lymphatic system is developed in some of the lower tribes of animals whose bodies are incased in an impervious covering, such as turtles, lizards and serpents, is adduced in farther consideration of Dr. W.'s views. He regards the serous membranes as contrivances for the accommodation of a great number of lymphatics; and the intimate connection which the function of these vessels has with the life and nutrition of internal organs, he thinks is shown by the remarkable amount of disturbance consequent on inflammation, or other morbid condition of serous membranes. Finally, Dr. W. adverts to the influence which the difference of endosmotic capability engendered by the abstraction of a certain amount of water in the course of the circulation (first between the blood corpuscles and the plasma in which they swim, and then between the liquor sanguinis and the containing channels) must have on the capillary circulation, which he conceives it is calculated to facilitate. *Proceedings of Royal Society*, March 16, 1843, No. 56.

6. *Mechanism of Digestion*—In our preceding number, page 432, we gave an account of the interesting memoir of MM. Bouchardat and Sandras, on digestion, communicated to the French Academy of Sciences towards the conclusion of last year. On the 30th of January of the present year, a very interesting report was made to that learned body on the memoir in question, by a committee consisting of MM. Payen, Magendie, Flourens, Milne-Edwards and Dumas.

The chemical experiments of this committee have established a new and very remarkable fact, consisting in the action exerted by water, acidulated with muriatic acid, on fibrin, albumen, casein, gluten, and fibrous tissues. All these substances swell, become translucid, and some of them dissolve. The addition of six parts of acid to ten thousand of water, suffices to produce this reaction.

The authors have, however, gone too far in considering the muriatic acid as the only agent in the solution of azotised alimentary substances. In fact, while fibrin, under its influence, merely becomes excessively tumefied, the addition of a few drops of runnet suffices to dissolve it completely; consequently, muriatic acid is not the only solvent in the gastric juice. We must also probably take into account the animal substance termed *pepsin*, detected in the stomach by MM. Schwann and Deschamps, and obtained in an isolated form by Wasmann.

It seems probable, according to the experiments of the authors of the memoir, that the neutral azotised animal substances, when dissolved in the stomach, pass directly into the veins.

Gluten is acted on in the same way. Starch and fecula are changed partially or entirely in the stomach, into lactic acid, and are absorbed in that state.

The fats evidently resist the action of the stomach. They pass into the intestinal canal. The committee regard the fats as the chief agent in the production of the chyle.—*Lond. and Edin. Month. Journ. Med. Sci.*, April, 1843.

7. *Worms in the Blood of a Dog.*—MM. Gruby and Delafond exhibited to the French Academy of Sciences, January 30th, 1843, filiform worms which were found alive in great numbers in the blood of a dog. At the subsequent meeting (Feb. 6th), MM. G. and D. communicated the following details relative to the case.

The worms had been seen circulating in the blood of a dog. The body of the worm is transparent and colourless. The anterior extremity is obtuse, and the posterior, or caudal end, terminates in a very minute filament. At the anterior part, a minute short furrow could be observed, which was regarded as the mouth. The movements of these animals are very lively; and they lived so long as ten days after the blood in which they were contained had been drawn from the animal, and deposited in a vessel at a temperature of 15° Cent. On examining a drop of blood under the microscope, these hæmatozoa were seen swimming about with an undulatory movement among the blood globules, curving, twirling, and twisting themselves about with great vivacity. Blood taken from the coccygeal arteries, external jugular veins, capillaries of the conjunctiva, &c., contained them. During twenty days, the capillaries of different parts of the skin and mucous membrane of the mouth were opened, and the hæmatozoa were constantly found in the blood which flowed from these wounds.

The diameter of the blood-globules of the dog is from seven to eight millièmes of a millimetre; that of the worm from three to five millièmes. Its size is therefore no obstacle to its circulating everywhere with the blood.

Notwithstanding the innumerable quantity of these worms circulating in the blood of this animal, it seemed to enjoy excellent health. Twelve months ago MM. Gruby and Delafond examined the blood of from seventy to eighty dogs, without finding any worms; and since the discovery of them in the present case, they have been equally unsuccessful in fifteen others.—*Lond. and Edin. Month. Journ. Med. Sci.*, Ap. 1843.

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8. *Structure of the Teeth.*—A report on Mr. A. Nasmyth's paper on this subject was read to the French Academy of Sciences, 5th December last, by M. Serres, in his own name, and in that of MM. Dutrochet and Flourens.

According to some authors, the teeth are composed of solid fibres, variously arranged, and according to others, of tubes. With the exception of Malpighi, most anatomists deny the existence of areolæ in the dental tissue, but both A. Nasmyth and Owen regard them as the specific character of this texture, and admit also the cellular arrangement in the enamel. Several preparations were presented to the commission by Mr. A. Nasmyth to prove this structure in the teeth. In examining these preparations by means of a microscope from 200 to 400 diameters, the areolæ were discovered in the ivory, and they were seen to be of different shapes and sizes according to the species of both examined, showing that this appearance could not be owing to any optical illusion. Mr. A. N. next enters into a consideration of the nature of the fibres of the teeth, whether they be tubular or solid. After mentioning the names of many authors who have espoused both sides of the question, he declares that the enamel contains no tubes, but the commission are of opinion that Mr. A. Nasmyth's preparations do not overturn the statements of Leeuwenhoeck and other anatomists, who admit the existence of tubes. Mr. A. N. has, however, clearly demonstrated the cellular structure of the enamel, which has not been distinctly done since the time of Eustachius, in the sixteenth century. Before his investigations nothing was known of the formation of the solid part of the tooth, and he refuted the idea that the permanent teeth were produced from the roots of the milk ones. The different theories of the formation of the teeth are then touched upon, and Mr. A. Nasmyth tries to show that a similar organization exists in the enamel, ivory, and bulb. Having found the cellular structure in the two first, he was led to look for it in the third, and his attempts were successful. In his preparations it has not always the same appearance, being reticulated in some, and vesicular, or approaching it, in others. A like structure was found in preparations made by the reporters themselves.

To our knowledge, continued M. Serres, no one has ever produced a more perfect set of preparations than that which Mr. A. Nasmyth has laid before the commission; and in studying and comparing them with the drawings which have been published from the times of Malpighi and Leuwenhoeck, to those of Retzius and Owen, and also with those which we ourselves have presented to the